Pinhole Photography

The Pinhole Camera Body:
A pinhole camera is a light-proof container with an opening roughly the size of a pinprick. It can be considered the most basic form of camera. Any object that can be made light-tight has the potential to be a camera.

Look for containers that can be opened and closed without difficulty. Avoid selecting an object that cannot be altered by painting the interior black, or cutting a hole for the aperture. Cardboard takes black paint easily as does wood, but metal and plastic need to be sanded to give a tooth for the paint to adhere to. If the black paint does not stick, the image will be fogged by internal reflections.

Containers may leak light. Small light leaks can be interesting but large ones tend to fog the film making the negative difficult to print. If a ready-made container is used for the camera body, select one with a tight-fitting lid. Shoe boxes have a narrow lid and are less desirable because they often develop leaks. Black masking tape can be used to seal anywhere that light is leaking. Black tape also makes a simple shutter for the aperture.

The size and shape of the container determine physical characteristics of the resulting photographs. Round objects having curved film planes produce wide angle distortion. Experiment with uneven film planes, short focal lengths combined with large film planes, angled film planes, etc. You can create distortions intentionally if you wish. For images that are more conventional in appearance, select a cube shape.

The Pinhole:
Start with a piece of aluminum from a soda can or other thin metal. Automotive supply stores carry paper-thin brass or stainless steel called shim stock. The thinner the metal the less refraction, and the sharper the image will be. You can use a push pin, a sewing needle mounted in a Exact-o holder, or a jeweler?s drill bit to make the aperture. If you are planning to use film it is better to make the hole with something measurable. US Sewing needles are a standard diameter as are the drill bits. In this way you know the diameter of the aperture and can divide that into the focal length to determine the f-stop. If you are using paper as your negative material, a push pin is adequate.

With trial and error you will be able to estimate what a particular camera?s exposure is. For the sharpest possible pinhole image, remember to sand the burr down with fine sandpaper. After you have pierced a small hole, turn the metal over and sand down the protruding metal around the hole. An irregular shaped hole, or one in thick metal, or with a burr, will produce an image that is less sharp. The other advantage to knowing the diameter of the aperture is that there is an optimum size pinhole for a particular focal length. Try using multiple apertures.

Film:
I like black and white printing paper, grade #2, single weight. I buy a roll of mural paper that is 60cm wide. This can be cut into any size camera I am using. Using paper allows me to develop by examination, under a safe light. Sometimes film is easier when traveling. You can alter an old view camera or build a camera body for cut film holders. This will speed up your work because reloading film each time you make an exposure with a changing bag takes time. Also you will have less problems with dust.

Materials:
cardboard found container for camera body thin metal: brass, or soda can push pin, needles, or jeweler?s drill bits black paint (flat) black masking tape fine sandpaper utility mat knife

Optional:
micrometer, changing bag